

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Chong Seng Cheng et al.	Group Art Unit: 2182
Serial No.: 09/803,173	Examiner: Gurtej Bansal
Filed: March 9, 2001	Confirmation No.: 9334
Title: Portable Data Storage Device	Docket No.: 1601457-0004

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Date: July 23, 2012

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REPLY BRIEF

This is a reply brief pursuant to 37 C.F.R. § 41.41 in response to the Examiner's Answer, dated May 23, 2012, in the above-identified application. The pending claims are reproduced in Appendix A.

Appellants believe that there is no fee for filing this reply brief. However, the Commissioner is hereby authorized to charge any required fees in connection with this reply brief to White & Case's Deposit Account No. 50-3672.

GROUND OF REJECTION TO BE REVIEWED

1. The rejection of claim 22 as unpatentable under 35 U.S.C. § 112, first paragraph, as failing to satisfy the written description requirement.

2. The rejection of claim 22 as unpatentable under 35 U.S.C. § 112, second paragraph, as being indefinite.

3. The rejection of claims 22-24 and 26-28 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,748,541 to Margalit et al.

4. The rejection of claims 29 and 30 as unpatentable under 35 U.S.C. § 103(a) over Margalit in view of U.S. Patent No. 6,407,949 to Jha et al.

ARGUMENT

1. Rejection of claim 22 under 35 U.S.C. § 112, first paragraph

The Examiner maintains the rejection of claim 22 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement and asserts that the specification as originally filed does not support the limitation "...having a memory space at least as large as the memory space of a magnetic disk or CD," recited in claim 22. Appellants respectfully traverse.

The as-filed specification describes the invention as relating to "a portable data storage device for a computer." *See* Specification, Field of the Invention. The specification then explains that the claimed portable data storage device relates to "conventional data storage devices," which "generally fall into two categories." *See* Specification, Background. The first category is "electronic, solid-state memory devices such as read only memory (ROM) and random access memory (RAM)[,]" which are generally not portable and therefore are not used "to permit the transfer of data from one computer to another computer." *Id.* Because such data storage devices are neither portable nor do they provide storage *for*, versus *inside*, a computer, the specification distinguishes them from the claimed invention. *Id.*

The second category is “surface based data storage devices in which data is stored, typically, on the surface of a disk or tape.” *Id.* Memory devices in this second category “are magnetic disks and CD ROMs.” *Id.* The specification describes magnetic disks and CD ROMs as requiring “a mechanical drive mechanism to be installed in or coupled to the computer to permit the data on the storage device to be read by the computer” and explains that “such mechanism for reading data from the storage device is generally bulky and/or delicate due to the moving parts that are required within the drive mechanism and/or storage device.” It further notes that the storage capacity of magnetic disks and CD ROMs are “limited by the surface area of the storage device[.]” .

Then, on this backdrop of magnetic disks and CD ROMs, which are portable and have standard/fixed data storage spaces, the specification introduces the invention as “a portable data storage device” and explains that the portable data storage device “does not include moving parts or require a mechanical drive mechanism to read the data from the data storage device.” In extolling the invention’s improvements over prior art, the specification highlights its portability and ease of use (no moving parts nor bulky reading equipment) as compared to magnetic disks and CD ROMs. Thus the skilled artisan reading this description would understand that the inventor was in possession of an invention that could replace and therefore serve as an alternative to mass storage devices such as magnetic disks and CD ROMs.

Through its descriptions of the prior art and the invention, the specification satisfies the written description requirement. To comply with the requirements of 35 USC § 112, first paragraph, the disclosure need only convey to one of ordinary skill in

the art that the inventor had possession of the claimed invention. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-63 (Fed. Cir. 1991). Here, based on the specification's references to magnetic disks or CD ROMs and descriptions of the claimed invention in relation to that prior art, the skilled artisan reading the specification would understand that the inventor had possession of the a portable USB mass storage device "having a memory space at least as large as the memory space of a magnetic disk or CD."

On page 12 of the Examiner's Answer, the Examiner stated "[i]f the magnetic disk or CD ROM was to store a byte of information or even a bit, a portable storage medium of the size of a byte or bit would be able to perform the necessary functions to serve as an alternative." This assertion by the Examiner is incorrect. The memory space of a magnetic disk or CD is not defined by any information that may be stored on it, but is a physical characteristic of the medium itself. A magnetic disk or CD has a known and standardized memory space, even when that memory space is empty – for example, a blank 1.44Mb floppy disk has a memory space of 1.44Mb. One of ordinary skill in the art would not understand a memory space of a magnetic disk or CD to be a single bit or a single byte. The skilled artisan would know that a memory having a memory space of one bit or byte would not enable the claimed storage device to serve as an alternative to mass storage devices such as a CD or magnetic disk.

On page 13 of the Examiner's Answer, the Examiner argues that the specification does not define or indicate some minimum amount of storage capacity needed to enable the portable data storage device to serve as an alternative to a magnetic disk or CD.

Applicants do not assert that their claims require a very specific minimum amount of storage space. Applicants assert that their claims require there to be at least the amount of storage space to enable the device to serve as an alternative to known mass storage devices at the time of the invention including magnetic disks and CDs.

A skilled artisan would have known the memory space of magnetic disks and CDs, which were well known and standardized at the time of the invention. For example, floppy disks were 1.44MB (*see* Appeal Brief, Ex. E, Hyde Affidavit, ¶13 (stating that a 3.5" floppy disk has a capacity of 1.44MB)),¹ CDs were 650MBs, and Zip disks were 100MBs.² Thus, the specification's disclosures that the portable data storage device is an improvement over magnetic disks and CD ROMs (in terms of ease of use and portability) coupled with knowledge of magnetic disks' and CDs' storage capacities would have conveyed to a skilled artisan that a portable data storage device with a memory space at least as large as the memory space of then-existing magnetic disks or CDs was in the possession of the inventor.

Appellants respectfully submit that the as-filed specification satisfies the written description requirement of § 112, first paragraph, and request that the rejection of claim 22 under § 112 be withdrawn.

¹ Hyde Affidavit is attached to Appellants' Appeal Brief as Ex. E, and thus, has not been attached hereto.

² Importantly, neither the claim language nor the specification requires a precise numerical minimum data storage amount to appear in the invention. The Board acknowledged in its November 2009 decision that the specification would not support a precise numerical minimum data storage amount. Claim 22, as amended, provides that the claimed invention has a "memory space at least as large as the memory space of a magnetic disk or CD." Claim 22 does not require a precise minimum data storage amount. It does, however, require that there be sufficient storage for the device to, at the minimum, store the amount of information as could be typically stored on a magnetic disk or CD at the time of the invention. Claim 22 as amended is not indefinite and it does not want for written description.

2. Rejection of claim 22 under 35 U.S.C. § 112, second paragraph

The Examiner maintains the rejection of claim 22 under 35 U.S.C. § 112, second paragraph as being indefinite. Appellants respectfully traverse.

Only when a claim remains insolubly ambiguous without discernible meaning after all reasonable attempts at construction can it be indefinite. *Exxon Research & Eng'g Co. v. U.S.*, 265 F.3d 1371, 1375 (Fed. Cir. 2001) (A claim is indefinite only if the “claim is insolubly ambiguous, and no narrowing construction can properly be adopted. [...] Even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds”); *Bancorp Services LLC v. Hartford Life Ins. Co. LLC*, 359 F.3d 1367 (Fed. Cir. 2004) (“[A] claim is not indefinite merely because it poses a difficult issue of claim construction; if the claim is subject to construction, i.e., it is not insolubly ambiguous, it is not invalid for indefiniteness.”) (citing *Honeywell Int'l, Inc. v. Int'l Trade Comm'n*, 341 F.3d 1332, 1338-39 (Fed.Cir.2003)). Thus, the definiteness of claim terms depends on “whether those terms can be given *any* reasonable meaning.” *Young v. Lumenis, Inc.*, 492 F.3d 1336, 1346 (Fed. Cir. 2007) (emphasis added). “If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, §112 demands no more.” *Miles Labs., Inc. v. Triangle Biomedical Equipm't, Inc.*, 997 F.2d 870, 875 (Fed. Cir. 1993). Here, there is no reading of the claims that would render them insolubly ambiguous and without discernible meaning. The limitations of claim 22 are definite.

a. “Memory space” limitation

In the Examiner’s Answer, the Examiner stated that the limitation of claim 22 “... having a memory space at least as large as the memory space of a magnetic disk or CD” is “indefinite because ... the size of a magnetic disk or CD ... can vary depending on the specific disk used.”

Applicants disagree with the Examiner’s conclusion that because the size of a magnetic disk or CD could vary the claim term is insolubly ambiguous without discernible meaning. *See Exxon Research & Eng’g Co.*, 265 F.3d at 1375. As stated above, the specification discloses that the claimed portable data storage device is designed and intended to be an alternative to other non-volatile mass storage devices such as magnetic or optical disks. At the time of the invention, it was well known to those of skill in the art that a floppy disk had a capacity of 1.44Mb, a Zip disk had a capacity of 100Mb and a CD had a capacity of 650Mb. Further, as technology progressed, capacities of storage media have increased and continue to increase today. This does not render the claim language insolubly ambiguous. A magnetic disk, CD, and the claimed portable data storage device are capable of being used for the similar purposes of storing information of any size up to the limit of the memory space of the particular medium. By relating the memory space of the non-volatile memory to the memory space of a magnetic disk or CD – two types of storage devices well-known to those of skill in the art – the claims reasonably apprise those skilled in the art of the scope of the invention. *See Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (finding phrase “so dimensioned as to be insertable through the space between the doorframe of an automobile and one of the seats thereof” not

indefinite because although automobiles are of various sizes, as long as those of ordinary skill in the art realized that the dimensions could be easily obtained, § 112, ¶ 2 requires nothing more); *Moore U.S.A., Inc. v. Standard Register Co.*, 229 F.3d 1091, 1111 (Fed. Cir. 2000) (“We note that there is nothing wrong with defining dimensions of a device in terms of the environment in which it is to be used.”); *Polymer Indus. Prods. Co. v. Bridgestone/Firestone, Inc.*, 10 Fed. Appx. 812, 818 (Fed. Cir. 2001) (holding that a claim for a turn-over bladder comprised of an unspecified number of cords was not indefinite for failure to provide the exact amount of cords because the amount of cord was claimed in relation to reducing adhesion by an unquantified amount, and therefore a person having ordinary skill in the art would know what amounts of cord were necessary to achieve the adhesion reduction and therein practice the claimed invention); .

The Examiner’s reliance on *Ex Parte Brummer*, 12 U.S.P.Q.2d 1653 (Bd. Pat. App. & Inter. 1989), a decision from 1989 that was not reviewed by the Federal Circuit, is misplaced. On page 15 of the Examiner’s Answer, the Examiner stated that in *Brummer* the claim to a bicycle was “indefinite because the relationship of parts was not based on any known standard for sizing a bicycle to a rider, but on a rider of unspecified size.” Claim 22 is distinguishable from the claimed bicycle of *Brummer*.

In *Brummer*, the claim at issue provided: “said front and rear wheels so spaced as to give a wheelbase that is between 58 percent and 75 percent of the height of the rider that the bicycle was designed for.” *Brummer*, 12 U.S.P.Q.2d at 1653. The invention in *Brummer* is claimed in reference to a non-specific bicycle rider, whose size is variable, causing the claimed invention to change depending on the size of the rider. Further, the claim in *Brummer* is circular – it defines the size of the wheelbase

of a bicycle in terms of the size of the rider that the bicycle was designed for. Contrast the invention of claim 22, which does not change depending on the user or what data are stored in it, and which does not suffer from any circularity issues. The memory space limitation in claim 22 is not defined in terms of the information that a user may store, but is defined by reference to other media having memory spaces of accepted standards. Indeed, storage capacities of magnetic disks and CDs were well known in the art: floppy disk of 1.44MB, CDs of 650MB, Zip disks of 100MB, etc. *See e.g.*, Appeal Brief, Ex. E, Hyde Affidavit, ¶13 (stating that a 3.5" floppy disk has a capacity of 1.44Mb). This is different than the situation in *Brummer*, where the claim was indefinite because no evidence was provided to show that a known *standard* exists in the field of bicycle manufacturing for sizing a bicycle to a rider. *Brummer*, 12 U.S.P.Q.2d at 1655.

The recent decision by this Board in *Ex parte Andrew W. Dornbusch and Charles D. Thompson*, 2012 WL 523270 (Bd. Pat. App. Interf. 2012) (hereinafter "Dornbusch") is instructive. *Dornbusch* provided that a claim limitation that could result in a parameter having "*any positive or negative value*" was nonetheless definite and was deemed to give "*the scope of the claims some breadth*" as the parameter was dependent upon a specific component and would be known once the component was selected. *Id.* (the claim limitation "not less than a first stopband attenuation of the first external filter" was definite even though the first stopband attenuation could be *any positive or negative number*, because when the external filter is selected its first stopband attenuation would also be known); *see also Exxon*, 265 F.3d at 1382 (limitation requiring a fishing pole be "at least three feet long" definite even if it

covers some embodiments that may be inoperable or impractical, such as a 50 foot long fishing pole). In line with *Dornbusch* and *Exxon*, claim 22's limitation "...having a memory space at least as large as the memory space of a magnetic disk or CD," is definite at least because (1) the memory space limitation referring to two known data storage devices at the time – a magnetic disk or CD – gives the claim some *breadth*, (2) the memory space would be known based upon the known memory spaces of the finite number of standard non-volatile storage media available at any given time, and (3) the invention is not claimed or defined in reference to any unknown variables or uses.

The Examiner also stated that claim 22 is indefinite because "the claims as recited actually refer to two different types of storage devices, a magnetic disk and a CD, which generally have at least two different storage capacities." But the use of alternative expressions such as "or" does not by itself render a claim indefinite. *See* MPEP 2173.05(h)(II). Indeed, it has been long established that alternative expressions using "or" may be definite. *See, e.g., In re Gaubert*, 524 F.2d 1222, 1227 (C.C.P.A. 1975) (finding various alternative expressions using the word "or" definite). In *Gaubert*, the court found that the limitation "iron, steel, or any other magnetic material" recited examples of common magnetic materials, and thus determined boundaries of the claim. *Id.* Similarly, the limitation "magnetic disk or CD" recites examples of well-known non-volatile storage devices that provide boundaries for claim 22. Thus, the recitation of "magnetic disk or CD" in claim 22 does not render the claim indefinite.

Thus, the limitation “having a memory space at least as large as the memory space of a magnetic disk or CD” is not insolubly ambiguous and is definite.

b. “Capable of storing” limitation

The Examiner maintains the rejection of claim 22 under 35 U.S.C. § 112, second paragraph as being indefinite with respect to the limitation “...capable of storing software for installation to the computer or of receiving and storing user’s data.” This language only appears in the preamble of claim 22. Appellants respectfully traverse.

On page 16 of the Examiner’s Answer, the Examiner cites to MPEP 2111.04, stating that “[c]laim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed.” In maintaining the rejection, the Examiner explained that “capability” indicates a “step of storing is made optional and not required to be performed.” However, the Examiner misapplies this portion of the MPEP and misinterprets Appellants’ statements in the Appeal Brief.

First, claim 22 is an apparatus claim for a “unitary portable data storage device,” not a method claim that recites steps. So the Examiner’s reliance on the language of MPEP 2111.04 about optional “steps to be performed” is misplaced.

Second, as previously stated in the Appeal Brief, “capable of” storing software or user’s data means that the claimed portable data storage device can actually do so. This portion of the preamble conveys to one of skill in art how the claimed data storage device can serve as an alternative to a magnetic disk or CD. Indeed, similar to a magnetic disk or CD, when the portable data storage device of claim 22 is manufactured, the non-volatile memory of the portable data storage device would

typically not have software or user's data being stored therein. But, like a blank magnetic disk or CD, that portable data storage device would be capable of storing a user's information in the non-volatile memory. A portable data storage device of claim 22 that does have information stored in the non-volatile memory is likewise "capable of" storing information. Thus, the limitation "... capable of storing software for installation to the computer or of receiving and storing user's data" is not insolubly ambiguous and is definite.

3. Rejection of claims 22-24 and 26-28 under 35 U.S.C. § 102(e)

The Examiner maintains the rejection of claims 22-24 and 26-28 under 35 U.S.C. § 102(e) as being anticipated by Margalit. Appellants respectfully traverse.

Claim 22 recites "a non-volatile solid-state memory...having a memory space at least as large as the memory space of a magnetic disk or CD to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD." Margalit does not disclose this limitation.

As stated in Appellants' Appeal Brief, Margalit discloses a device that "authentical[es] information and/or stores passwords or electronic certificates in a token." Margalit, col. 4:20-22. The device is a USB key that functions to control access to a host computer or network to protect confidential information. To do this, the key device uses a "'dual factor authentication' process...[where] (a) the electronic token is 'read' by the host PCC or network and (b) the user types in his or her personal password for authorization for VPN, extranet and e-commerce[.]" Margalit, col. 3:41-52; *see also* Appeal Brief, Ex. A-D (reaffirming the purpose and function of

the Aladdin Knowledge Systems devices as clearly providing security to software and data).³

Consistent with its key functionality, the Margalit device is described as being “analogous to a memory smart card.” Margalit, col. 4:21-22. The amount of information on a memory smart card was very small at the time of the invention – over 1000 times smaller than a magnetic disk; smart cards had memory only up to 1KB whereas magnetic disks could store 1.44MB. *See* Appeal Brief, Ex. E, Hyde Affidavit, ¶ 2.

On page 17 of the Examiner’s Answer, the Examiner stated that Margalit teaches “the storage of firmware memory and user data...and places no limitation on the storage capacity of the firmware memory and user data in non-volatile storage (col. 4, lines 35-42)...[and thus] functions as an alternative to storing data on either a magnetic disk or CD.” Appellants respectfully disagree because (1) Margalit does place explicit limitations on the storage capacity of the firmware memory and user data in non-volatile storage both in that it likens its invention to a smart card and in that the types of data Margalit teaches to store on the key device are very small, and (2) the key device of Margalit does not function as an alternative to storing data on either a magnetic disk or a CD.

As explained above, Margalit self-describes its key device invention as being “analogous to a memory smart card” and the amount of information on a memory smart card was very small at the time of the invention – only up to 1KB – which is not large enough to provide the data storage functions of magnetic disks or CDs.

³ Ex. A-D are attached to Appellants’ Appeal Brief, and thus, have not been attached hereto.

Thus, the key device of Margalit does not “hav[e] a memory space at least as large as the memory space of a magnetic disk or CD” as required by the claimed invention.

Further, the user data that can be stored in Margalit’s small (1KB) storage area are “authenticat[ing] information and/or stor[ing] passwords or electronic certificates” (Margalit col. 3:42-43) to protect sensitive information such as “user identity authentication information, banking information, [and] access rights information” (Margalit, col. 6:30-32) for “banks, insurance companies, accountants and other commercial organizations and professional organizations such as medical or legal organizations” (Margalit, col. 5:32-37). These data types give no indication of data storage space greater than 1KB (the types of data disclosed do not specifically exceed 1KB), nor do they explain any theoretical function of the key device of Margalit as a mass data storage device that is claimed here.

On page 17 of the Examiner’s Answer, the Examiner cites a disclosure in Margalit about having confidential medical information on the key device. The nature of the information does not change the fact that Margalit’s disclosed storage (about 1KB) is inconsistent with service as an alternative to a magnetic disk or CD. The purpose behind having confidential medical information on the key device is to insure that such information is not in a computer network. Margalit, col. 7:14-16. Margalit’s confidential medical information could consist of just one number or a “positive” or “negative” test result. Nothing in Margalit suggests that the confidential medical information could be larger than the small (1KB) data storage space disclosed in Margalit. Thus, as explained in the Appeal Brief, Margalit does not

disclose a device with a “memory space at least as large as the memory space of a magnetic disk or CD.”

But even if Margalit were to have storage space analogous to a magnetic disk or CD (it does not), the function of the key device of Margalit is distinct from that of a portable data storage device. Margalit teaches a key for granting a user access to, *e.g.*, a computer network. Margalit does not disclose any function as a mass data storage device. It would not be logical to use the key as a mass data storage device. A person having ordinary skill at the time of the invention would not have thought that the access key of Margalit could be used as a replacement for a CD or magnetic disk. The Examiner’s argument that the key device of Margalit’s could in theory be used as a data storage device appears nowhere in the Margalit reference itself. Margalit teaches only an access key, which cannot “function[] as an alternative to storing data on either a magnetic disk or CD” and thus does not anticipate claim 22.

On page 18 of the Examiner’s Answer, the Examiner stated that “the claim language does not necessarily require that the memory space be as large as the total capacity of a magnetic disk or CD or even some minimum amount...[such that] the broadest reasonable interpretation can be construed...[as a] memory space...just enough in size to store a piece of data...[that is] a byte or even a bit.” Appellants respectfully disagree.

As explained above, the plain meaning of the limitation “memory space at least as large as the memory space of a magnetic disk or CD” is clear: at least as large as the memory space of a typical magnetic disk or CD at the time of the invention. The Examiner’s “broadest reasonable interpretation” of a memory space of a

magnetic disk or CD as a bit or byte is not reasonable. One of ordinary skill in the art would not understand a memory space of a magnetic disk or CD to be a single bit or a single byte. One of ordinary skill in the art would also recognize that a storage capacity of one bit or byte would not enable the claimed invention to serve as an alternative to a CD or magnetic disk, and therefore such a storage capacity would render the claimed invention non-operative (and therefore reflect improper claim construction) or would bring any device with such storage capacity outside the claim language.

Further, Margalit does not disclose a memory controller that enables a portable device to serve as an alternative to a magnetic disk or CD. “Analogous to a memory smart card,” the Margalit device disclosed in its Figure 1 is designed to store data that does not require a high-performance memory controller for accessing the memory. *See* Ex. E, Hyde Affidavit, ¶¶ 21-22. In fact, Margalit discloses a CY7C63001A component, a low speed (1.5 Megabits per second) USB interface component, to be used in its key, clearly indicating a slow data rate. *Id.* at 22; Margalit, FIGs. 3 and 4 (showing Cypress CY7C63001A controller). A skilled artisan would understand that the CY7C63001A component disclosed in Margalit could handle only a small amount of data and was not designed to operate in a portable storage device capable of serving as an alternative to a magnetic disk or CD. *See* Ex. E, Hyde Affidavit, ¶¶ 20-22. Thus Margalit does not disclose that the key device is able to serve as an alternative to a magnetic disk or CD.

Margalit does not disclose all of the limitations of claim 22. Appellants respectfully submit that claim 22 is not anticipated by Margalit and is in condition for

allowance. Claims 23, 24, and 26-28 depend from claim 22, and thus are also not anticipated by Margalit and are in condition for allowance.

4. Rejection of claims 29 and 30 under 35 U.S.C. § 103(a)

The Examiner maintains the rejection of claims 29 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Margalit in view of U.S. Patent No. 6,407,949 to Jha et al. Appellants respectfully traverse.

As discussed above, Margalit does not disclose each and every limitation of the parent claim 22, and thus does not disclose each and every limitation of claims 29 and 30, which depend from claim 22 and incorporate all of its limitations. Further, one of ordinary skill in the art would have no reason to modify the device of Margalit to include a set of flash macros as disclosed by Jha. The purpose and function of Margalit's smart card with a small memory for authenticating a user to access an external host computer or network is wholly inconsistent with Jha's flash macros that enable an ASIC to perform simultaneous read and write operations in a mobile telephone. Margalit is a key used to grant access to an external resource, and Jha teaches a flash card that operates in a mobile phone.

Claim 29 recites "the non-volatile solid-state memory is divided into a plurality of zones, each of the plurality of zones being selectively accessible in response to a zone selection received via the USB plug." Jha does not disclose this limitation. As set forth in the Appeal Brief the flash macros of the Jha ASIC are accessed according to requests from the microprocessor or other component of the ASIC itself (Jha, col. 11:2-3), not from a zone selection received from outside of the ASIC. Yet, on page 17 of the Examiner's Answer, the Examiner cites to Figure 4 and col. 10:60-col. 11:17 as

disclosing that the “memory is divided into a plurality of zones, being selectively accessible in response to zone selection.” Appellants respectfully disagree.

The operation of the flash macros of Jha are distinguishable from the zones recited in claim 29. The flash memory of Jha is embedded on the ASIC (Jha, col. 7:7-9) and is used primarily for storing CDMA software code for use by the microprocessor or the CDMA peripheral components (Jha, col. 6:16-19). Although Jha discloses that the flash memory can also be used for storing names, telephone numbers, addresses, dates, calendars, schedules, voice memos and the like (Jha, col. 6:26-31), the *ASIC via its internal software code directs where this data is stored by accessing and selecting the flash macros* (Jha, col. 5:52-59, col. 8:9-20) based on the associated wait states (Jha, col. 9:60-62; col. 10:15-33) and the status of the most current read or write operations (Jha, col. 12:5-17). Thus, Jha does not disclose that the flash macros are “selectively accessible...via the USB plug” as the ASIC of Jha uses internal functions and software code to control the selection of and access to the flash macros.

On page 20 of the Examiner’s Answer, the Examiner further argues that it would have been obvious to one of ordinary skill in the art to combine Margalit and Jha to “provide faster access to flash memory” and to “prevent inadvertent erasures or reprogramming of portions of the flash memory.”

However, the function of Jha greatly differs from that of Margalit. The operation of Margalit’s USB smart card device requires the presence of *a separate host* (e.g., flexibly connectible computer system) to which the device must be connected via its USB plug (Margalit, 2:23-30; Figure 1; Figure 5b). In contrast, Jha discloses an independently

operable device (e.g., a cellular telephone), akin to a host, without any provisions for USB connectivity. Indeed, it is improper to combine the teachings of Jha and Margalit as they are directed to starkly contrasting devices: Jha is directed to an independently operable host device that does not incorporate a USB interface and Margalit is directed to an access key device dependent upon operating *with a separate host* with a USB interface. Thus, one having ordinary skill in the art would not have been motivated to combine the teachings of Jha and Margalit.

As further pointed out in the Appeal Brief, the two references disclose systems geared towards completely opposing objectives. Margalit teaches a device to authenticate a user to access an external host computer or network, whereas Jha teaches a mobile telephone that includes a flash memory divided into a set of flash macros to allow access to the memory “much more quickly” particularly for “voice telephone calls,” where “any delay necessitated by having to wait for a previous write operation to be completed before reading from the flash memory may be significant.” Jha, col. 2:7-25. More specifically, the flash macros of Jha are directed to facilitating simultaneous read and write operations (Jha, col. 3:44-54) while controlling overall degradation of the memory (Jha, col. 4:1-10) from frequent read and write operations through the use of wait states.

In contrast, there is no disclosure in Margalit that (1) its memory may need to be accessed “much more quickly” than required in other applications, (2) it requires the capability of performing simultaneous read and write operations, (3) the memory requires degradation control, or (4) any delay from waiting for a previous write operation to be completed before reading from the memory may be significant. Rather, Margalit’s

device merely “authenticat[es] information and or stores passwords or electronic certificates” (Maraglit, col. 3:42-42), all of which require exceedingly small memory space, very few read or write operations, and do not present the typical issue of access speed that is a reality in a *host device*, such as a mobile phone. Thus, one of ordinary skill in the art would have no motivation to divide the small memory of Margalit’s user authentication key into a set of flash macros as disclosed by Jha’s mobile telephone *host device*.

Further, the mere fact that Jha and Margalit refer to flash memory and Jha refers to the USB protocol does not, without more, make the two references combinable.

Neither Margalit nor Jha, alone or in combination, discloses all of the limitations of claim 29. Further, one of ordinary skill in the art would have no reason to modify the device of Margalit to include a set of flash macros as disclosed by Jha. Appellants respectfully submit that claim 29 is not obvious in view of the cited references and is in condition for allowance.

Claim 30 depends from claim 29 and is therefore allowable for at least the same reasons. Further, claim 30 recites “wherein one or more of said plurality of zones require a unique password received via the USB plug for access,” which is not disclosed by either Margalit or Jha.

On page 19 of the Examiner’s Answer, the Examiner cited to col. 10:60-62 as disclosing that “Jha teaches storing passwords associated with different portions of a flash memory array...[such that] each command specifies a password along with an identification of the memory to be access[ed].” Appellants respectfully disagree as the unique password is not received via a USB plug. Similar to how the ASIC controls the

selection and access to the flash macros (discussed above), for each read or write command, *the ASIC specifies the password* along with the memory address and the data to be read or written to such address. Jha, col. 11:2-7. Additionally, the *passwords are predefined* and are assigned to each peripheral component or to each flash macro to protect from peripheral components inadvertently overwriting memory. Jha, col. 11:17-27; col. 11:31-34. Thus, Jha does not disclose “a unique password received via the USB plug for access” as the passwords are predefined and the ASIC specifies the appropriate password for each read or write command. Appellants respectfully submit that claim 30 is not obvious in view of the cited references and is in condition for allowance.

5. Claims 22-24 and 26-28 are not obvious in view of Margalit

Although claims 22-24 and 26-28 have not been rejected under 35 U.S.C. § 103(a) as being unpatentable in view of Margalit, to the extent that the Examiner or the Board may be inclined to find such a new ground of rejection, Appellants respectfully traverse.

It would not have been obvious to one of ordinary skill in the art to modify the USB key of Margalit to have a non-volatile memory with a memory space at least as large as the memory space of a magnetic disk or CD to enable the key device to serve as an alternative to a magnetic disk or CD. Margalit discloses a security device that does not have the capability of serving as an alternative to a magnetic disk or CD.

There is no teaching or suggestion in Margalit that the key device could serve as an alternative to a magnetic disk or CD. Margalit compares the key device to a “memory smart card,” which is not an alternative to a mass storage device such as a magnetic disk

or CD. Margalit clearly states that the key is “analogous to a memory smart card.” Margalit, col. 4:21-22. One of ordinary skill in the art would not have looked to devices “analogous to a memory smart card” as a possible alternative to a magnetic disk or CD because the amount of information on a memory smart card was very small at the time of the invention – only up to 1KB. *See* Appeal Brief, Ex. E, Hyde Affidavit, ¶ 21.

Margalit discloses that its device is intended to hold only certain information, *i.e.*, “information characterizing a mobile user” Margalit, col. 6:27-32. “Such information may comprise user identity authentication information, banking information, access rights information, etc.” *Id.* Hence, “analogous to a memory smart card,” the Margalit device disclosed in its Figure 1 is designed to store data that does not require a high-performance memory controller for accessing the memory. *See* Ex. E, Hyde Affidavit, ¶¶ 21-22. In fact, Margalit teaches use of a CY7C63001A component, a low speed (1.5 Megabits per second) USB interface component, to be used in its key, clearly indicating a slow data rate. *Id.* at 22; Margalit, FIGs. 3 and 4 (showing Cyprus CY7C63001A controller). As a result, a skilled artisan would understand that the CY7C63001A component taught in Margalit, which could handle only a small amount of data, was not designed to operate in a portable storage device capable of serving as an alternative to a magnetic disk or CD. *See* Ex. E, Hyde Affidavit, ¶¶ 20-22. Thus one of ordinary skill in the art would not have been motivated to modify the key of Margalit to enable it to serve as an alternative to a magnetic disk or CD.

Although Margalit contains a cursory reference to some ability to have confidential medical information stored on the key device (Margalit, col. 7:13-14), such “confidential medical information” could consist of just one number or a

“positive” or “negative” test result. Nowhere in Margalit does “confidential medical information” have volume. Further, Margalit self-describes its key device invention as “analogous to a memory smart card.” Margalit, col. 4:21-22. Therefore it necessarily has very limited data storage capabilities, including storage for confidential medical information. See Appeal Brief, Ex. E, Hyde Affidavit, ¶ 21 (explaining that at the time of the invention the information stored on a memory smart card was very small – up to only 1KB).

Secondary Considerations

Evidence of secondary considerations (including an expert’s firsthand practical knowledge of unsolved needs at the time of the invention and Appellants’ commercial success of the data storage device of claim 22 combined with copying by others)⁴ clearly demonstrates that claim 22 is not obvious in view of Margalit. Exhibit E to the Appeal Brief, the Affidavit of John Hyde, an expert in the field of Universal Serial Bus (USB) and USB-based devices, presents evidence of secondary considerations.⁵

“Firsthand practical knowledge of unsolved needs in the art, by an expert, is evidence of the state of the art.” See *In re Piasecki*, 745 F.2d 1468, 789 (Fed. Cir. 1984) (citing *In re McKenna*, 203 F.2d 717 (C.C.P.A. 1953)). At the time of the invention, “[t]he long-felt needs for greater capacity storage devices (especially for music and graphic files), however, led to the development and introduction of alternative storage

⁴ The Federal Circuit held in *Cable Elec. Prods., Inc. v. Genmark, Inc.*, 770 F.2d 1015 (Fed. Cir. 1985), that such evidence should always be considered.

⁵ Although the present version of claim 22 is not identical to the version of claim 22 that appears in the Hyde Affidavit, Trek’s ThumbDrive product satisfies the limitations of the present version of claim 22 and thus Mr. Hyde’s evidence and opinions apply with equal force to the present version of claim 22.

devices.” Ex. E, Hyde Affidavit, ¶ 13. “Many touted alternatives, such as IBM’s 2.88MB floppy disk, Iomega’s ZIP and Jaz Drives, Imation’s SuperDisk, Sony’s HiFD Drive, and Rewritable Compact Discs, comprise a two-part system, namely a drive (*i.e.*, the mechanism for reading and writing data from and to the storage media) and the storage media itself (usually a magnetic disk or CD). This was the approach utilized by the incumbent ‘drive and media’ systems.” *Id.* “For various reasons, none of these touted replacements truly lived up to expectations or replaced the floppy disk as the universal medium for storage.” *Id.* at ¶ 15. Clearly, Mr. Hyde’s firsthand knowledge of unsolved needs in the art at the time of the invention is evidence of the state of the art at that time. In other words, the long-felt needs and failure by others at the time of the invention combined with the fact that the storage device of claim 22 fulfilled such long-felt needs strongly indicate the non-obviousness of claim 22. *See* Ex. E, Hyde Affidavit, ¶¶ 12-15, 24.

A combination of commercial success and copying by others may provide strong evidence of non-obviousness. *See Heidelberg Harris, Inc. v. Mitsubishi Heavy Industries, Ltd.*, Civ. App. No. 99-1100 (Fed. Cir. Sept. 18, 2000) (unpublished). The assignee of the application, Trek, manufactures and sells an embodiment of the portable data storage device of claim 22 under the trademark “ThumbDrive.” Ex. E, Hyde Affidavit, ¶ 11. Ever since the launch of the ThumbDrive in 2000, the never-before-seen products have enjoyed numerous praise from industrial commentators and tremendous commercial success because of the ThumbDrive’s features. *See* Ex. E, Hyde Affidavit, ¶ 12, 24-29.

After seeing the ThumbDrive at COMDEX 2000, Wayne Krakau reported in the Chicago Computer Guide that “[t]he most impressive bit of hardware technology at COMDEX was also the smallest. It’s called the ThumbDrive. ... The idea for this device is so clever and so handy that I’m surprised that nobody else has thought of it before.” Ex. E, Hyde Affidavit, Ex. JH-1 at 29. Another report from COMDEX 2000 characterized the ThumbDrive as “actually an attractive alternative to all those monosyllable, mobile megabyte machines: Zip, Jaz, Click!, and Orb.” *Id.* Ex. JH-1 at 33. In an article in June 2002, a reviewer described the ThumbDrive introduced in February 2000 as “a portable USB-powered solid-state storage solution that brought about the beginning of the end of floppy drives.” *Id.*, Ex. JH-1 at 45. And in February 2000, Storagesearch.com called the ThumbDrive “a technological breakthrough in the memory-data companion IT sector.” *Id.*, Ex. JH-2 at 133. Thus, persons of skill in the art at the time of the invention recognized the ThumbDrive as a breakthrough in portable data storage devices and recognized it as an alternative to magnetic disks and CDs.

The Thumbdrive “has been a commercial success ever since it was launched in February 2000, at CeBit 2000, which is the foremost computer and IT fair in the world. . . . [S]ince the launch, over 450,000 units of the claimed invention’s various versions, *e.g.*, ‘ThumbDrive Smart,’ ‘ThumbDrive Secure,’ and the latest, the ‘ThumbDrive Touch,’ were sold around the world, with sales averaging 12 million Singapore dollars from 2000 to 2003 (approximately 6.8 million U.S. dollars based upon the average exchange rate from 2000 to 2003).” *Id.* at ¶ 12. “Apart from the CeBit and COMDEX shows in 2000, [the assignee] Trek also exhibited the claimed invention at the Computex show in Taiwan.” *Id.* at ¶ 25. In October 2001, Trek was selected by IBM to manufacture

essentially the “ThumbDrive” products for IBM, which were to be sold as the “IBM Memory Key.” *Id.* at ¶ 26. A similar deal was entered into with Sonnet Technologies in December 2001. *Id.* After Trek introduced the ThumbDrive into the market, other companies have copied the portable data storage device of claim 22. *Id.* at ¶ 31.

As held by the Federal Circuit, a combination of commercial success and copying by others may provide strong evidence of non-obviousness. The praises by industrial commentators clearly show the commercial success enjoyed by the ThumbDrive resulted from its features that are recited in claim 22. This commercial success combined with copying by others clearly shows that claims 22-24 and 26-28 would not have been obvious to one of ordinary skill in the art at the time of invention. *See Heidelberg*, Civ. App. No. 99-1100 (Fed. Cir. Sept. 18, 2000) (unpublished).

Thus, claims 22-24 and 26-28 are not obvious in view of Margalit.

CONCLUSION

For the foregoing reasons, Appellants respectfully submit that the pending claims satisfy the written description requirement, are definite, and are not anticipated or obvious in view of the cited references, and thus are in condition for allowance.

Respectfully submitted,

Dated: July 23, 2012

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APPENDIX A: CLAIMS APPENDIX

1.-21. (canceled).

22. A unitary portable data storage device which can be directly plugged into a universal serial bus (USB) socket of a computer and which is operative to function as an alternative to a magnetic disk or compact disk (CD), and which is capable of storing software for installation to the computer or of receiving and storing user's data present in the computer, the unitary portable data storage device comprising:

- a USB plug integrated into the unitary portable data storage device without an intervening cable capable of coupling the unitary portable data storage device directly to a USB socket on a computer;
- an interface allowing the unitary portable data storage device to communicate via the USB protocol and being coupled to the USB plug;
- a non-volatile solid-state memory, said memory being non-removable from the unitary portable data storage device and having a memory space at least as large as the memory space of a magnetic disk or CD to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD; and
- a memory controller, the memory controller being coupled between the interface and the memory to control storage of data received via the USB plug in the memory in a manner to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD, the data including at least user data that is not authorization data.

23. A unitary portable data storage device according to claim 22, wherein the memory controller is non-removable from the unitary portable data storage device.
24. A unitary portable data storage device according to claim 22, wherein the non-volatile solid-state memory is a flash memory.
25. (canceled)
26. A unitary portable data storage device according to claim 22, wherein the memory controller comprises a micro-controller.
27. A unitary portable data storage device according to claim 26, wherein the micro-controller includes a read-only memory which stores a program to control the operation of the micro-controller.
28. A unitary portable data storage device according to claim 22, wherein the unitary portable data storage device is sufficiently compact to maximize portability.
29. A unitary portable data storage device according to claim 22, wherein the non-volatile solid-state memory is divided into a plurality of zones, each of the plurality of zones being selectively accessible in response to a zone selection received via the USB plug.

30. A unitary portable data storage device according to claim 29, wherein one or more of said plurality of zones require a unique password received via the USB plug for access.